	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1		**Whiting**	**ResponseToQuestions**														
2		**ENCLOSURE 5**	**REQUEST # >>>**														
3				**3**				**4**					**5**			**6(a)**	
4		**Oil and Natural Gas Well Name(s)**	**NDIC File #**	**Does this Well send Produced Oil to a well pad that also receives Produced Oil from one or more other Wells.**	**If yes, list the names of all other Wells that send Produced Oil to the well pad that receives Produced Oil from the Well listed in Column B.**	**How many Tank Batteries are located at the well pad, and indicate for each Tank Battery which Well(s) produce into that Tank Battery.**	**How many Tank Vapor Capture Systems are used to control Tank Battery emissions at the well pad, and indicate which Tank Batteries are controlled by each Tank Vapor Capture System. If more than one Tank Vapor Capture System exists at the well pad, create a new row for each additional Tank Vapor Capture System in Enclosure 5 to provide subsequent information as to each Tank Vapor Capture System in separate rows.**	**Provide the potential for VOC Emissions (in tons per year)**	**Maximum average daily throughput determined for a 30-day period of production prior to the applicable emission determination deadline for that Produced Oil or Produced Water Storage Tank, and the method by which this value was determined (including all design considerations, measured values, calculations, and assumptions)**	**Specify the generally accepted model or calculation methodology that was used to calculate potential for VOC emissions based on the maximum average daily throughput determined for a 30-day period of production prior to the applicable determination deadline**	**For each model or calculation methodology identified in response to Question 4.c, provide an explanation of how that model or calculation methodology was applied**	**Identify all legally and practically enforceable limits that were taken into account in the determination of potential for VOC emissions.**	**Did Whiting conduct a design analysis of the Tank Vapor Capture System & Control Device prior to or after its construction? [Yes or No]**	**If yes, what was the date the analysis was conducted?** [Date]	**Supply all Documents supporting the design analysis of each Tank Vapor Capture System and Control Device [list the filenames if provided electronically or an Attachment name identifier if hard copy]**	**Piping & instrumentation diagram of the process (wellhead(s) to Control Device). [list the filenames if provided electronically or an Attachment name identifier if hard copy]**	**If more than one Produced Oil Storage Tank is present within a Tank Vapor Capture System, describe how Produced Oil flows between the storage tanks**
5		SMITH FEDERAL 44-12PH	28056														
6		SKUNK CREEK 1-8-17-15H	30599														
7		URAN FEDERAL 22-24H	29023														
8		SMITH FEDERAL 41-13PH	28055														
9		TARPON FEDERAL 44-19-2RH	22556														
10		MOCCASIN CREEK 14-33-28-4H	25587														
11		MOCCASIN CREEK 14-33-28-3HS	25584														
12		ROGGENBUCK 11-25-3H	30572														
13		TARPON FEDERAL 44-19-1RTF	22554														
14		TARPON FEDERAL 44-19TFHU	27413														
15		TARPON FEDERAL 44-19-1RH	29199														
16		KOALA 4-4-28-3H3	27410														
17		URAN FEDERAL 21-24H	28770														
18		ROGGENBUCK 11-25-2H	30570														
19		HANSEN 44-28-3H	28645														
20		P DAM STATE 155-99-4-16-21-14H	28542														
21		ARVO 12-33TFH	30292														
22		TARPON FEDERAL 44-19-3RTF	29200														
23		KOCH 34-19PH	28674														
24		TARPON FEDERAL 44-19-2RTF	22555														
25		CHARGING EAGLE 10-14-11-2H	25292														
26		CYMBALUK FEDERAL 41-15PH	29086														
27		PRONGHORN FEDERAL 14-12PH	27692														
28		TARPON FEDERAL 24-20-1H	28492														
29		TIMBER CREEK 21-27-3H	30753														
30		CURTIS MOEN 41-26-3H	29914														
31		BERGSTROM 11-13H	29350														
32		FLATLAND FEDERAL 11-4TFHU	27522														
33		P DAM STATE 155-99-4-16-21-13H	28540														
34		TARPON FEDERAL 24-20-2RH	28495														
35		P DAM STATE 155-99-4-16-21-13H3	28539														
36		BREHM 12-27-2H	29987														
37		FLATLAND FEDERAL 11-4HR	27521														
38		P THOMAS 154-98-16-33-28-1H	28499														
39		MOCCASIN CREEK 14-33-28-4H3	25588														
40		CHARGING EAGLE 10-14-11-3H3	30390														
41		PRONGHORN FEDERAL 11-13PH	27691														
42		SMOKEY 4-15-22-14H	25361														
43		WALDOCK FEDERAL 14-4-3XH	27231														
44		BERGSTROM 21-13H	29352														
45		CHERRY STATE 31-16HU	30510														
46		TARPON FEDERAL 21-4-1H	22360														
47		KOALA 13-31-30-4H	29340														
48		VIOLA PENNINGTON 11-3H	25331														
49		REMINGTONTTT 41-26TFH	29809														
50		SKAAR FEDERAL 41-3TFH	27284														
51		IVERSON 31-14TFH	29197														
52		KNIFE RIVER STATE FEDERAL 13-32H	27287														
53		CHERRY STATE 31-16-3H	30466														
54		KOALA 13-31-25-1H	29495														
55		TIISTO 43-7-2H	29071														
56		KOALA 4-4-29-1H	27408														
57		SONDROL 11-3HU	30631														
58		P DAM STATE 155-99-4-16-21-14H3	28541														
59		OJA 13-27-3XH	25932														
60		CHARGING EAGLE 10-14-11-2H3	25293														
61		CHARGING EAGLE 10-14-11-3H	30273														
62		HANSEN 44-28-2H	28647														
63		ARNDT FEDERAL 34-35H	25163														
64		ROVELSTAD 21-13HU	29815														
65		MRACHEK 21-26-5H	29198														
66		TWO SHIELDS BUTTE 3-24-12-4H	18518														
67		TARPON FEDERAL 24-20-2RTF	28494														
68		BOCK FEDERAL 44-7PH	27947														
69		TWO SHIELDS BUTTE 3-24-12-3H3	20257														
70		SHIRLEY MOEN 44-34-3H	30119														
71		ROGGENBUCK 34-24-2H	30447														
72		ELSIE BARTLESON FEDERAL 14-29TFX	25849														
73		KOALA 13-31-30-4H3	29341														
74		BREHM 13-7TFH	28222														
75		ODDIE 44-7H	29884														
76		KANNIANEN 21-4H	28481														
77		P THOMAS 154-98-16-33-28-1H3	28497														
78		RJ MOEN 41-26HU	29913														
79		LITTLEFIELD FEDERAL 11-34H	27710														
80		NORTHERN 155-100-30-31-1H	23423														
81		SKEDSVOLD 21-4-5H	29073														
82		BREHM 13-7H	28221														
83		LITTLEFIELD 41-12-2XH	26434														
84		SKUNK CREEK 1-8-17-15H3	30598														
85		KOALA 4-4-28-4H	27409														
86		DULETSKI FEDERAL 14-11PH	27833														
87		TIISTO 43-7H	29072														
88		P THOMAS 154-98-14E-33-28-3H3A	29043														
89		P THOMAS 154-98-14E-33-28-3H3	29045														
90		SKAAR FEDERAL 41-3TFHU	27283														
91		KOALA 13-31-30-3H3	29339														
92		SONDROL 11-3-3H	30321														
93		P WOOD 154-98-4E-26-35-14HA	28406														
94		KOALA 4-4-28-4H3	27825														
95		SKAAR FEDERAL 41-3-1H	22386														
96		P THOMAS 154-98-14E-33-28-3H	29044														
97		TARPON FEDERAL 24-20-3RTF	28496														
98		LITTLEFIELD 41-12-3XH	26433														
99		PRONGHORN FEDERAL 14-10PH	24159														
100		TWO SHIELDS BUTTE 14-21-16-2HS	18987														
101		TARPON FEDERAL 24-20-1RTF	28493														
102		DOUG KINNOIN 11-14H	25181														
103		STATE 31-3-3H	29419														
104		ROVELSTAD 21-13-3H	29814														

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3	**6(b)**		**6(c)**			**6(d)**	**6(d)(i)**	**6(d)(ii)**	**6(d)(iii)**	**6(d)(iv)**	**6(d)(v)**		**6(e)**	**6(e)(i)**	**6(e)(ii)**	**6(f)(i)**	**6(f)(ii)**
4	**Identify the gas gathering pipeline into which the Tank Battery location enters. [Name of P/L(s)]**	**What is the maximum allowable operating pressure of that pipeline?** [psig]	**Where heater treaters are used, indicate the maximum recycle rate that may occur for each treater.**	**Provide a narrative description of how the production from the upstream Wells is set to flow to the initial Pressure Vessel(s) (e.g. continuous pump, based on time, pressure, other parameter(s) or a combination of these).**	**State whether more than one Well can flow to an initial separator concurrent with another Well or Wells.**	**Provide a description, name and tag # ID of the initial separator(s) (e.g. single stage, dual stage, dual coil, HLP, VGR, etc.).**	**1st Stage - Maximum operating pressure and temperature.** [psig and °F]	**1st Stage - Describe where any separated gas is routed from the initial Pressure Vessel.**	**2nd Stage - Maximum operating pressure and temperature.** [psig and °F] [If applicable]	**2nd Stage - describe where Flash Emissions from this stage is routed. [If applicable]**	**Does the final separator stage feature a device on the liquid outlet line to prevent a vortex from forming during a liquid dump event?** [Yes or No]	**If yes, provide a narrative description.**	**Is there an intermediate Pressure Vessel(s) between the initial separator and the Produced Water and Produced Oil Storage Tank(s)? [Yes or No]**	**Intermediate separation vessel - Maximum operating pressure and temperature.** [psig and °F] [If applicable]	**Describe where Flash Emissions from the intermediate separation vessel(s) are routed. [If applicable]**	**Oil outlet pipe interior diameter from the separation vessel immediately upstream of the Produced Water and Produced Oil Storage Tank(s). [inches]**	**Produced Water outlet pipe interior diameter from the separation vessel immediately upstream of the Produced Water and Produced Oil Storage Tank(s). [inches]**
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3	**6(g)(i)**	**6(g)(ii)**	**6(h)(i)**	**6(h)(ii)**	**6(i)**	**6(i)(i)**	**6(j)(i)**	**6(j)(ii)**		**6(j)(iii)**		**6(j)(iv)**		**6(j)(v)**		**6(k)(i)**	**6(k)(ii)**	**6(l)**	**6(m)(i)**
4	**Oil outlet pipe orifice plate diameter and make, model, size and trim of the liquid dump valve from the separation vessel immediately upstream of the Produced Water and Produced Oil Storage Tank(s). [inches]**	**Produced Water outlet pipe orifice plate diameter and make, model, size and trim of the liquid dump valve from the separation vessel immediately upstream of the Produced Water and Produced Oil Storage Tank(s). [inches]**	**Describe whether the Oil is trucked or piped offsite. If neither, provide an explanation.**	**Describe whether the Produced Water is trucked or piped offsite from the Produced Water and Produced Oil Storage Tank(s). If neither, provide an explanation.**	**Is the control system and dump valve managing the flow of liquids from the Pressure Vessel immediately upstream of the Produced Water and Produced Oil Storage Tank(s) results in continuous or is in intermittent dumping events?**	**If the type of flow depends on the amount of liquid throughput or other operating parameters, describe the conditions under which each type of flow will occur.**	**If intermittent batches, what triggers a liquid dumping event?**	**Maximum Produced Oil volume of the separation vessel immediately upstream of the Produced Oil Storage Tank(s). [barrels]**	**Volume dispensed during an individual dump event?**	**Maximum Produced Water volume of the separation vessel immediately upstream of the Produced Water Storage Tank(s). [barrels]**	**Volume dispensed during an individual dump event?**	**Average daily Oil production during July 2015. Exclude any duration the Well was not in operation. [bbl/day]**	**Peak Instantaneous flow rate of Oil during dump event from the separator to the Produced Oil Storage Tank(s). [gallons/minute]**	**Average daily Produced Water production during July 2015. Exclude any duration the Well was not in operation. [bbl/day]**	**Peak Instantaneous flow rate of Produced Water during dump event from the separator to the Produced Water Storage Tank(s). [gallons/minute]**	**Maximum pump rate of the Produced Oil from the separator to the Produced Oil Storage Tank(s). [gallons/minute]**	**Maximum pump rate of the Produced Water from the separator to the Produced Water Storage Tank(s). [gallons/minute]**	**For each Tank Vapor Capture System, provide the number of Produced Water and Produced Oil Storage Tank(s) and their volume. [# and barrels]**	**Pressure relief settings (psi) on the thief hatch and pressure relief valve on the Produced Water and Produced Oil Storage Tank(s) or Tank Vapor Capture System. Note any changes in pressure relief settings that may have occurred, include the original and modified settings and date(s) when changed. [psi & Date]**
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3	**6(m)(ii)**			**6(m)(iii)**	**6(m)(iv)**	**6(m)(v)**			**6(m)(vi)**	**6(m)(vii)**	**6(m)(viii)**	**6(m)(ix)**	**6(m)(x)**	**6(m)(xi)**			**6(m)(xii)**	**6(m)(xiii)**	
4	**Pressure control valve installed on the vapor collection system between the Produced Water and Produced Oil Storage Tank(s) and the end Control Device including make, model, size, and any additional features affecting its flow capacity**	**Provide either its Cv and Cf values or its performance curve.**	**List the filenames if provided electronically or an Attachment name identifier if hard copy**	**Thief hatch gasket/seal information, including the type of gasket/seal used (e.g. rubber, Viton).**	**Pipe length from the Produced Water and Produced Oil Storage Tank(s) to the Control Device (if the Tank Vapor Capture System collects vapor from multiple tanks, use the average pipe length for all the Produced Water and Produced Oil Storage Tank(s) to the Control Device). [feet]**	**Inner pipe diameter of the Tank Vapor Capture System from the Produced Water and Produced Oil Storage Tank(s) to the Control Device. [inches]**	**Note any changes in inner pipe diameter that may have occurred, include the original and modified diameters.**	**Note any changes in inner pipe diameter that may have occurred, include the date(s) when changed.**	**Number of short radius elbows** (short radius elbows have a radius equal to the pipe diameter). [#]	**Number of long radius elbows** (long radius elbows have a radius 1.5 times the pipe diameter). [#]	**Number of tee's**	**Number and type of valves** (e.g. gate, check, globe, etc.). [# and Type]	**Rated pressure loss across the combustor (combustion device) burner assembly as provided by the manufacturer of the combustion device.** [psi]	**Describe any low points in the Tank Vapor Collection System piping where liquids could accumulate.**	**Describe the frequency of draining these liquids.**	**Describe the indicator, if any, that notifies the Operator that liquids must be drained or that excessive flow restrictions have developed in the piping.**	**Set-point pressure and maximum flow capacity of any backpressure valves installed on the Tank Vapor Capture System.** [ounces/in^2 and scf/hr]	**Flame arrestor information including make, model, size and performance curve showing the pressure loss as a function of the flow rate** [list the filenames if provided electronically or an Attachment name identifier if hard copy]	**Indicate the maximum tolerance for arrestor fouling considered in the Tank Vapor Capture System design, and describe the indicator, if any, that notifies the Operator that the arrestor has become fouled and is in need of servicing (especially at sites where waste gas flow to the end Control Device are intermittent)**
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4	**Provide a narrative description of the operations and maintenance program Whiting employs to ensure emissions are minimized from the Produced Water and Produced Oil Storage Tank(s) and Tank Vapor Capture System(s) / thief hatch(es) / pressure relief valve(s), and the frequency of such. [list the filenames if provided electronically or an Attachment name identifier if hard copy]**	**Identify the type of Control Device used (e.g. open flare, Enclosed Combustor, VRU, etc.) from the period covering the date of first production to present.**	**Identify the control efficiency of the Control Device** [%]	**Any changes to the type of Control Device used during the relevant time period must be listed with the corresponding date range for each Control Device's use.**	**The Control Device specifications under which the control efficiency for volatile organic compounds can be achieved.** [list the filenames if provided electronically or an Attachment name identifier if hard copy] [scf/hr]	**The combustor manufacturer recommended maintenance and service requirements.** [list the filenames if provided electronically or an Attachment name identifier if hard copy]	**Provide a narrative description of the servicing Whiting performs on the combustor(s) and the frequency of such. [list the filenames if provided electronically or an Attachment name identifier if hard copy]**	**What is the construction date of the Produced Water and Produced Oil Storage Tank(s) associated with each Well.**	**Filename of extended hydrocarbon liquid analysis of a pressurized Produced Oil sample from the Pressure Vessel immediately upstream of the Produced Oil Storage Tank(s). [filename]**	**Filename of extended hydrocarbon liquid analysis of a pressurized Produced Water sample from the Pressure Vessel immediately upstream of the Produced Water Storage Tank(s). [filename]**	**API Gravity of Produced Oil in the Produced Oil Storage Tank(s).**	**Reid Vapor Pressure of Produced Oil in the Produced Oil Storage Tank(s). [psia]**
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